

FIG. 1

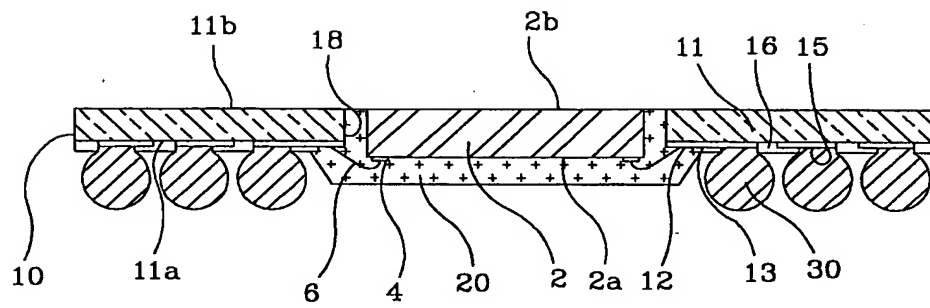


FIG. 2

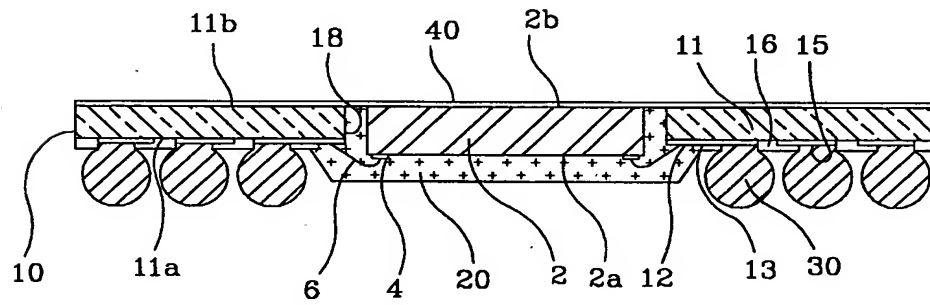


FIG. 5

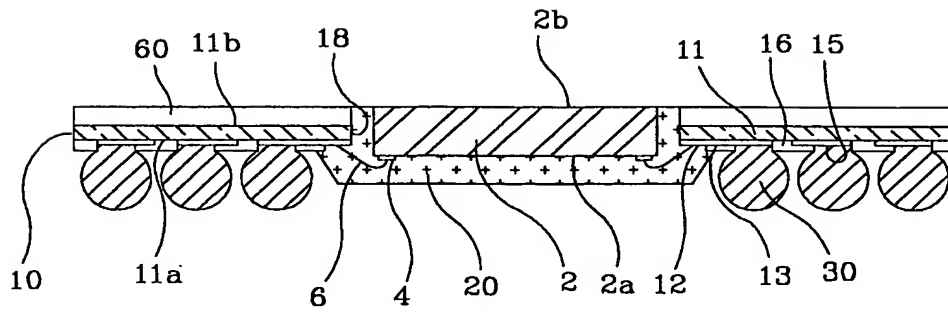
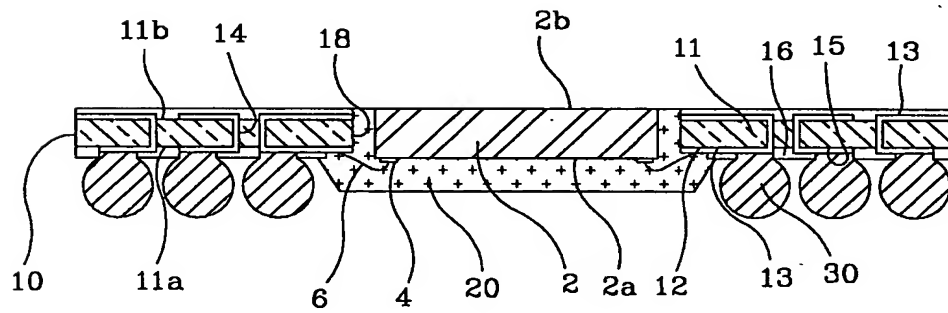


FIG. 6



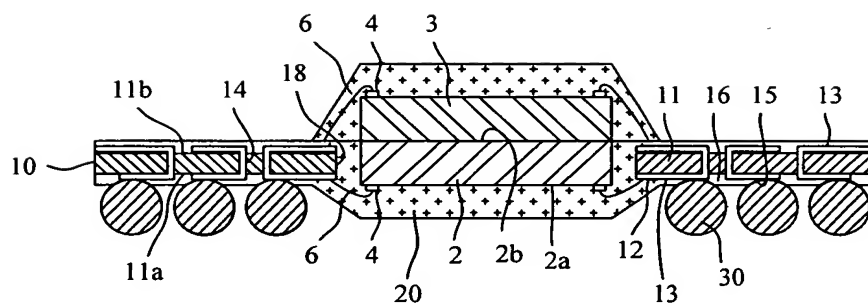


FIG. 6A

FIG. 7

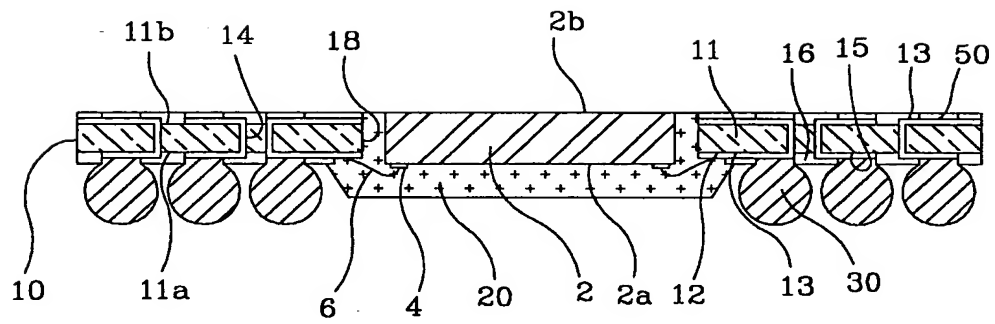


FIG. 8

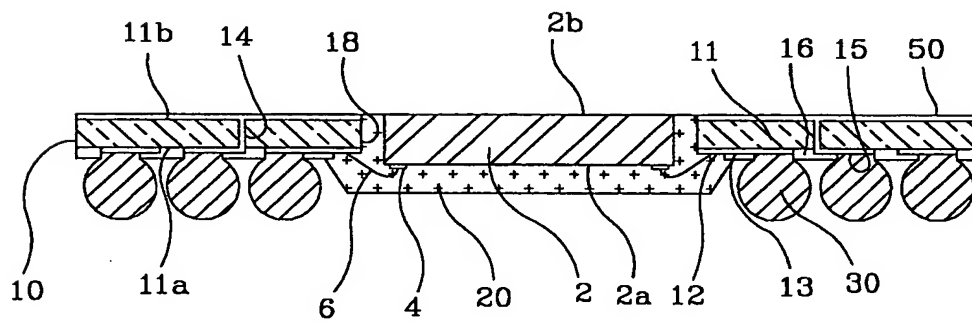


FIG. 7A

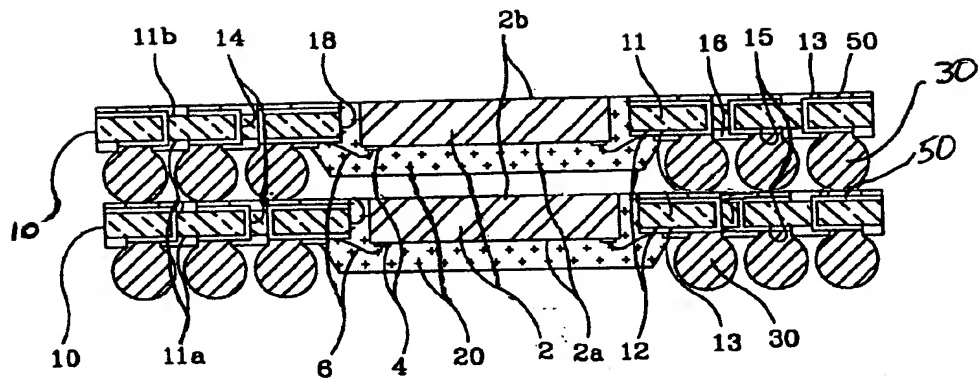


FIG. 9

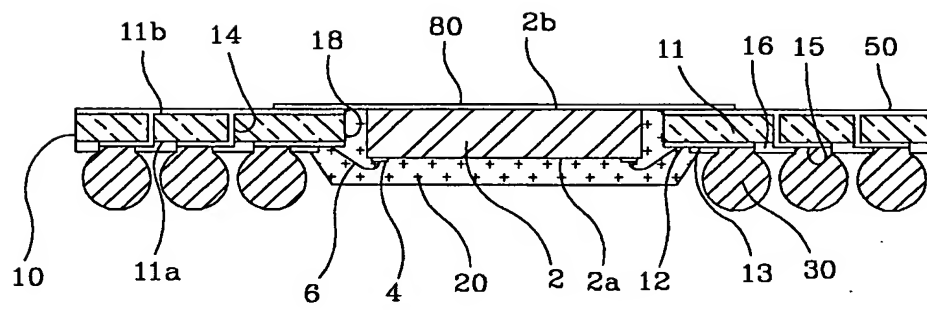


FIG. 10A

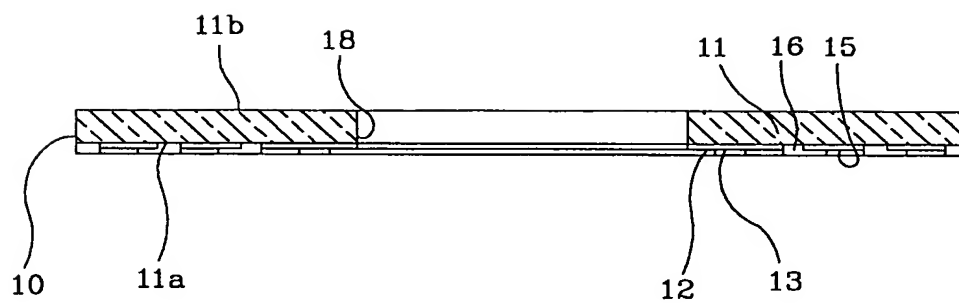


FIG. 10B

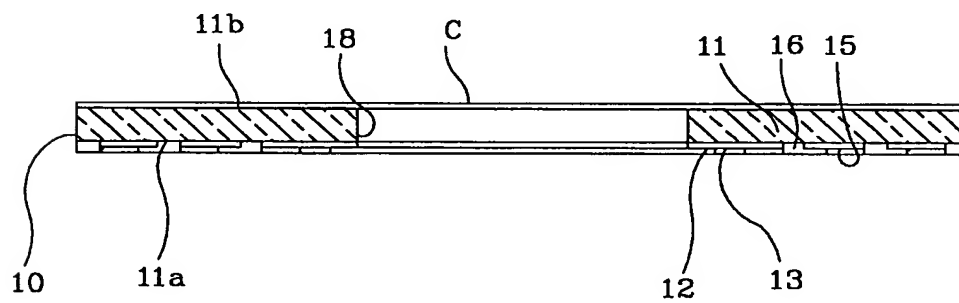


FIG. 10C

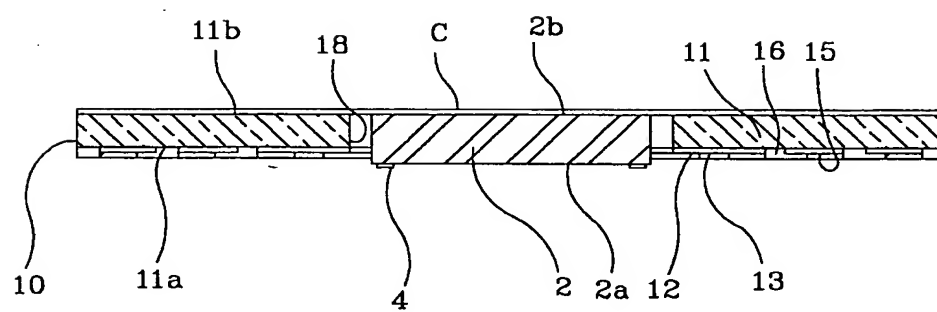
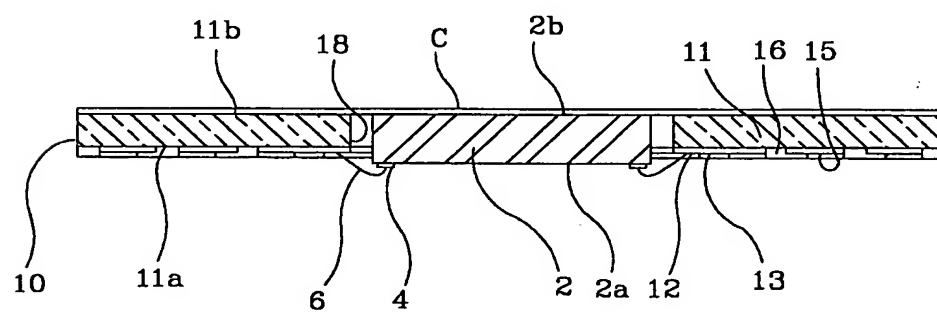


FIG. 10D



This cross-sectional view shows a semiconductor device with a trench structure. The device includes a substrate 10 with a top layer 11b and a bottom layer 11a. A trench 18 is formed in the top layer 11b, and a bottom layer 11a is exposed at the bottom of the trench. A conductive layer 15 is formed on the top surface of the substrate 10, and a conductive layer 16 is formed on the side walls of the trench 18. A conductive layer 13 is formed on the bottom surface of the trench 18. A conductive layer 12 is formed on the side walls of the trench 18. A conductive layer 20 is formed on the bottom surface of the trench 18. A conductive layer 2a is formed on the side walls of the trench 18. A conductive layer 2b is formed on the top surface of the substrate 10. A conductive layer 4 is formed on the bottom surface of the trench 18. A conductive layer 6 is formed on the side walls of the trench 18. A conductive layer 13 is formed on the bottom surface of the trench 18. A conductive layer 12 is formed on the side walls of the trench 18. A conductive layer 20 is formed on the bottom surface of the trench 18. A conductive layer 2a is formed on the side walls of the trench 18. A conductive layer 2b is formed on the top surface of the substrate 10. A conductive layer 4 is formed on the bottom surface of the trench 18. A conductive layer 6 is formed on the side walls of the trench 18.

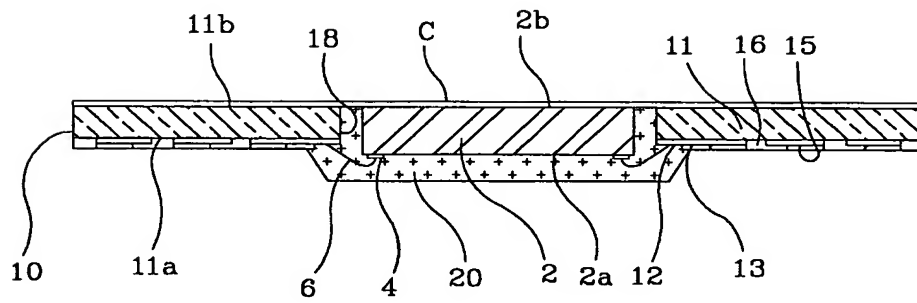
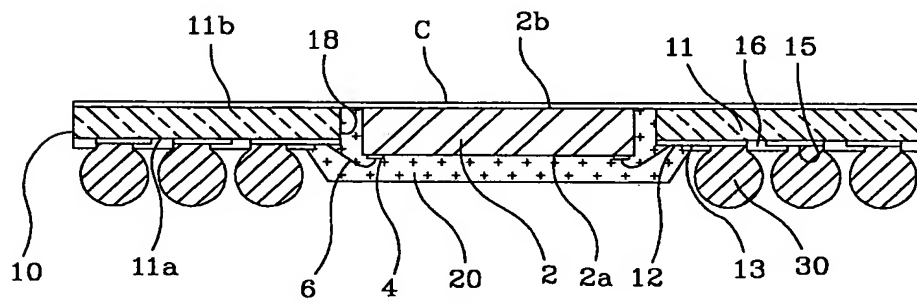
[illegible]

FIG. 10G

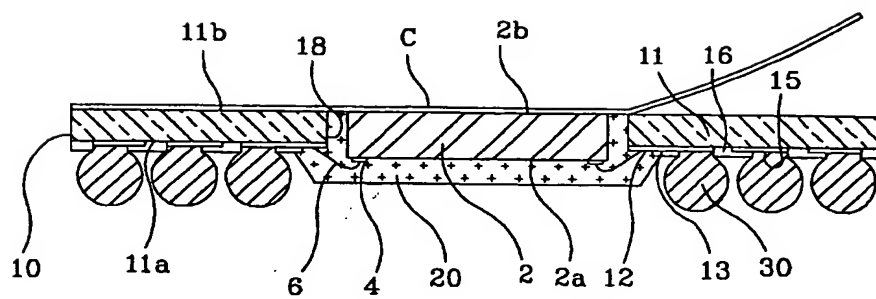


FIG. 11A

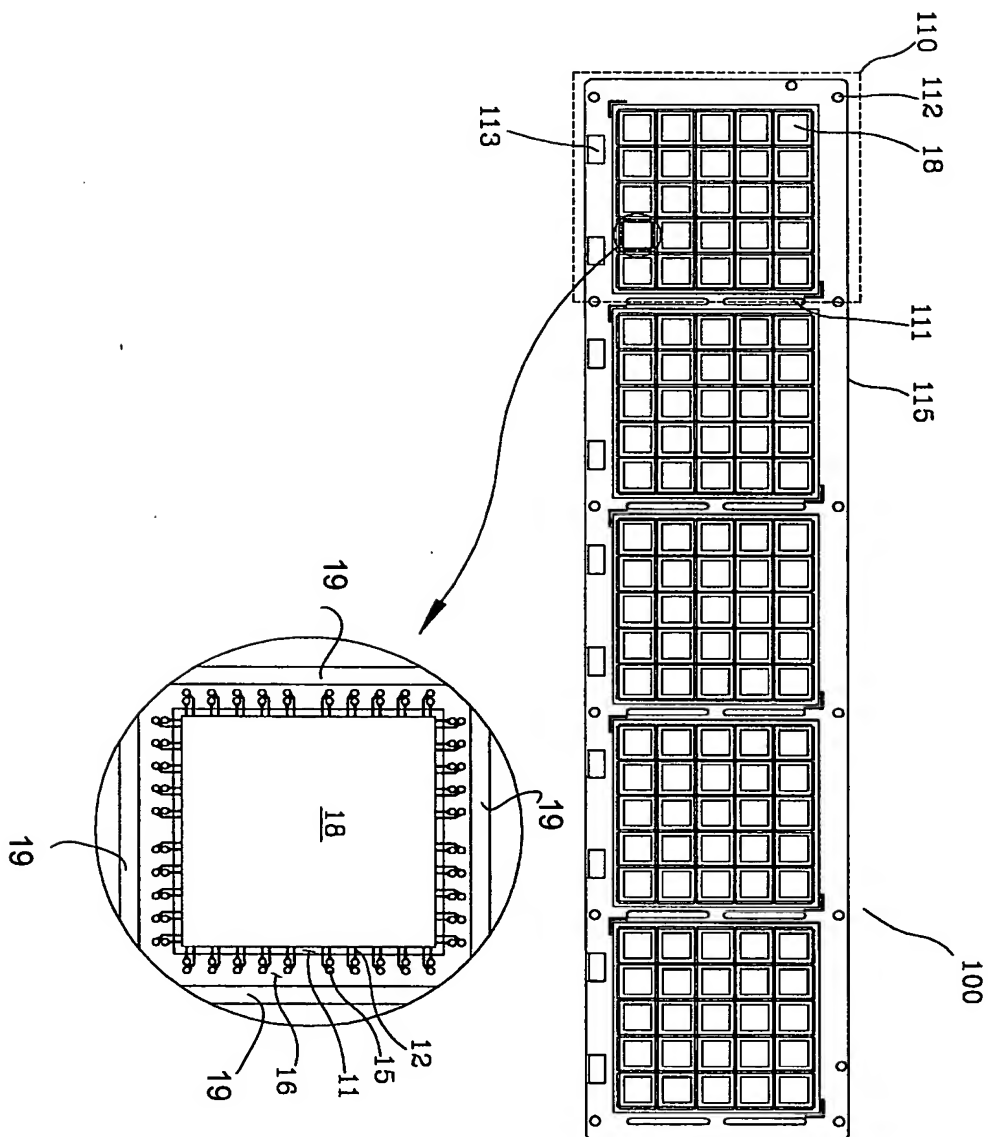


FIG. 11B

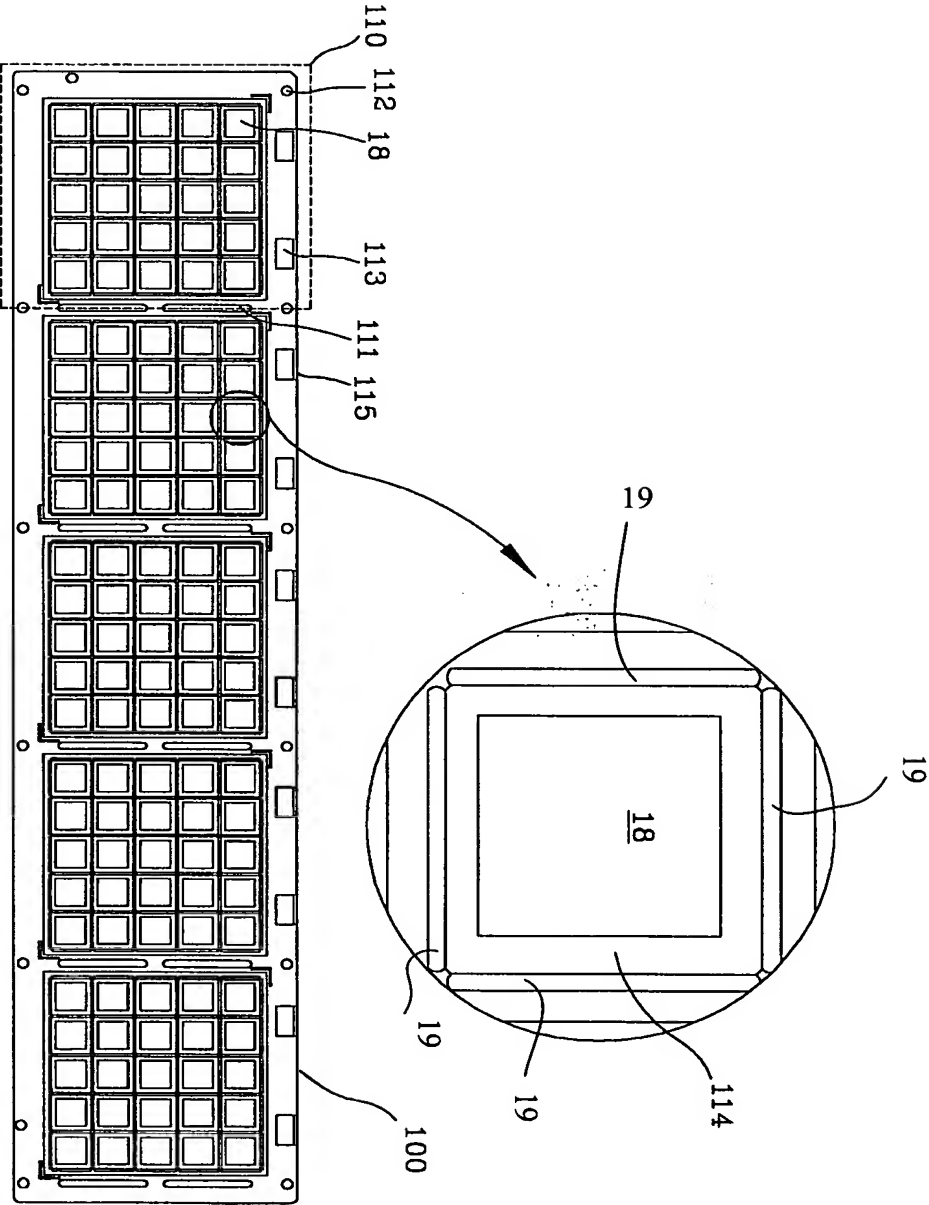


FIG. 11C

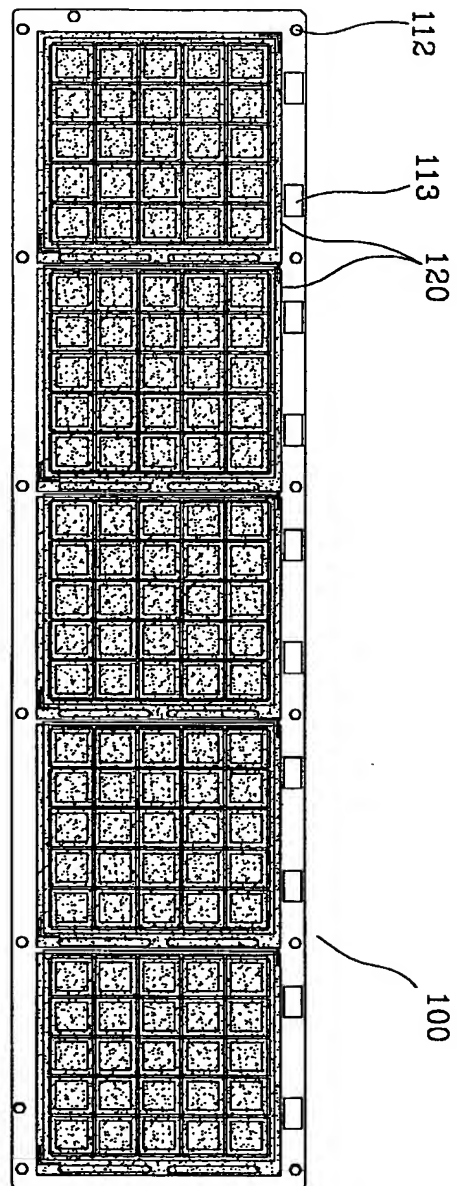


FIG. 11D

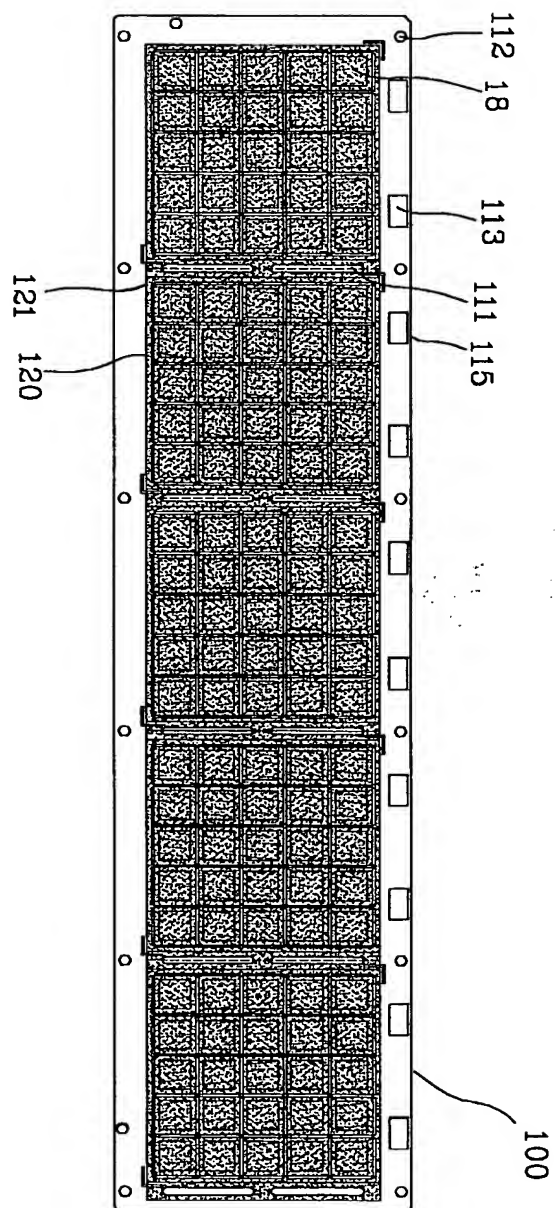


FIG. 12A

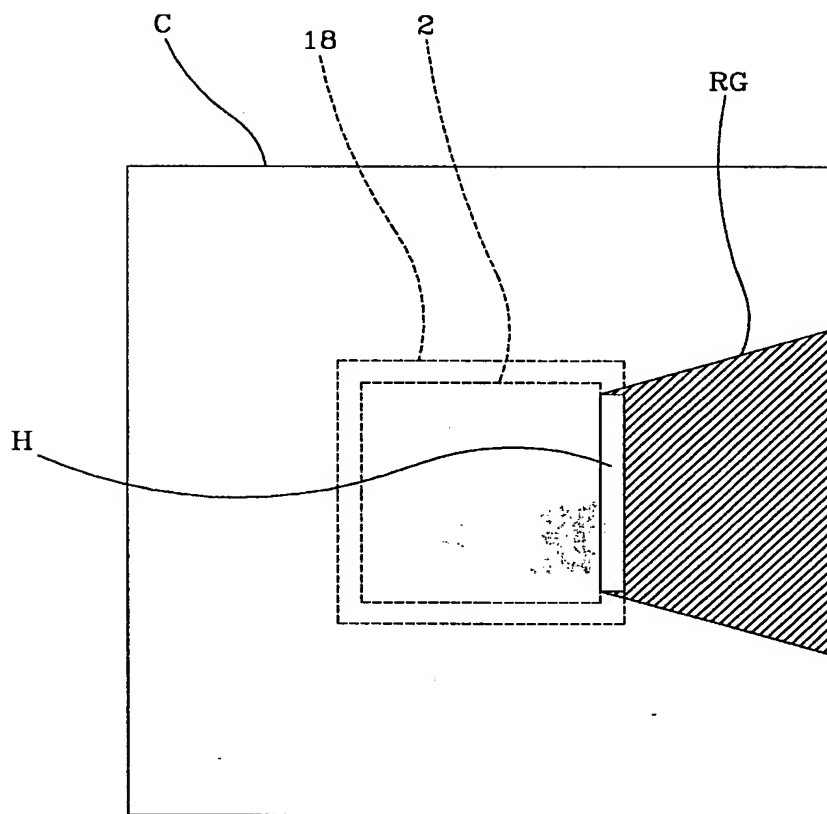
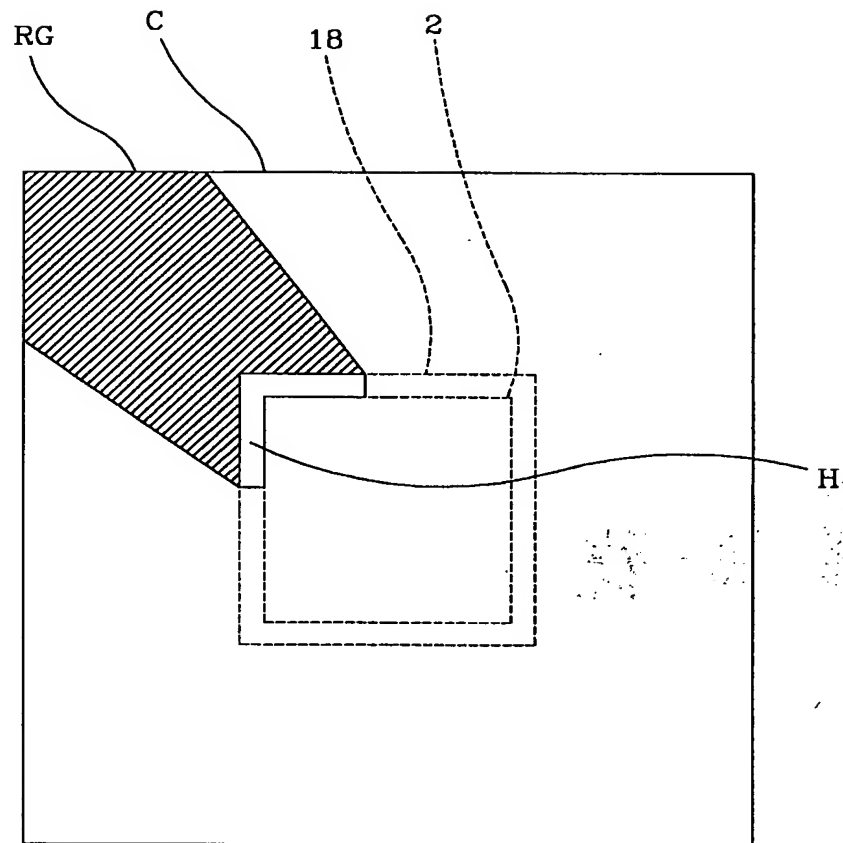


FIG. 12B



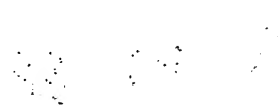


FIG. 14

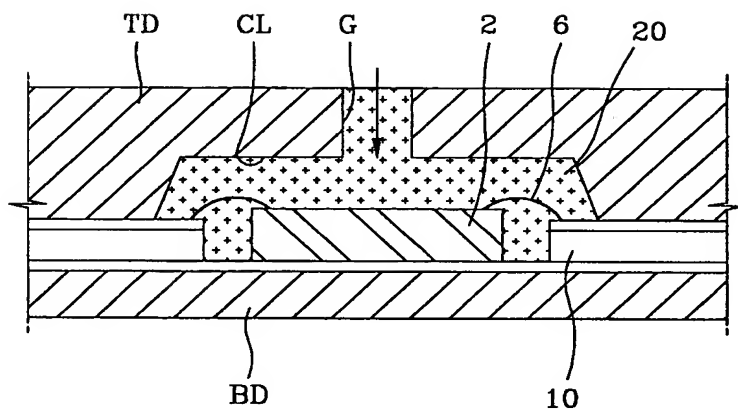


FIG. 15A

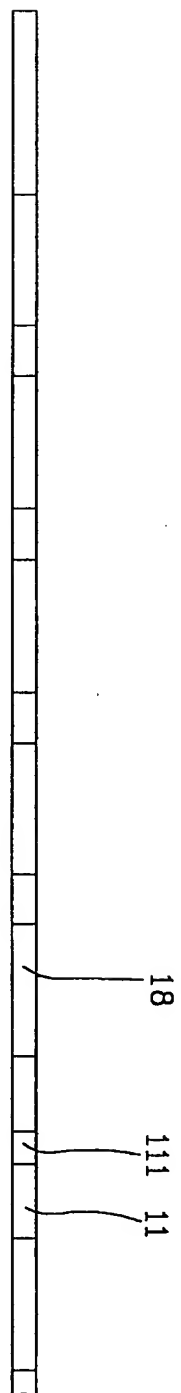


FIG. 15B

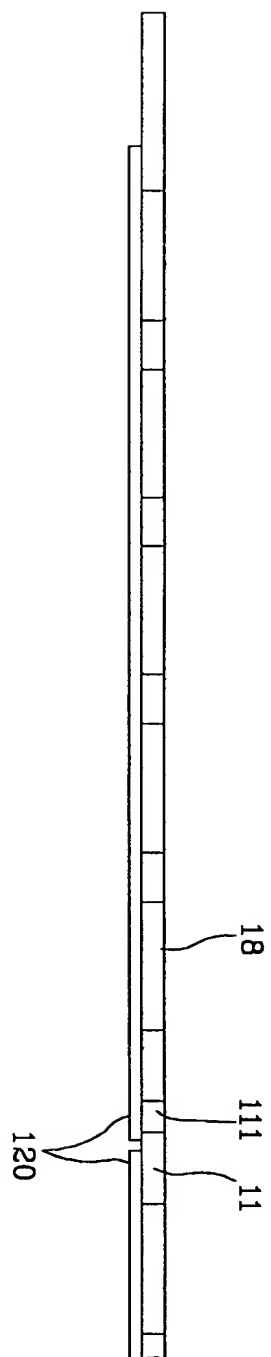


FIG. 15B'

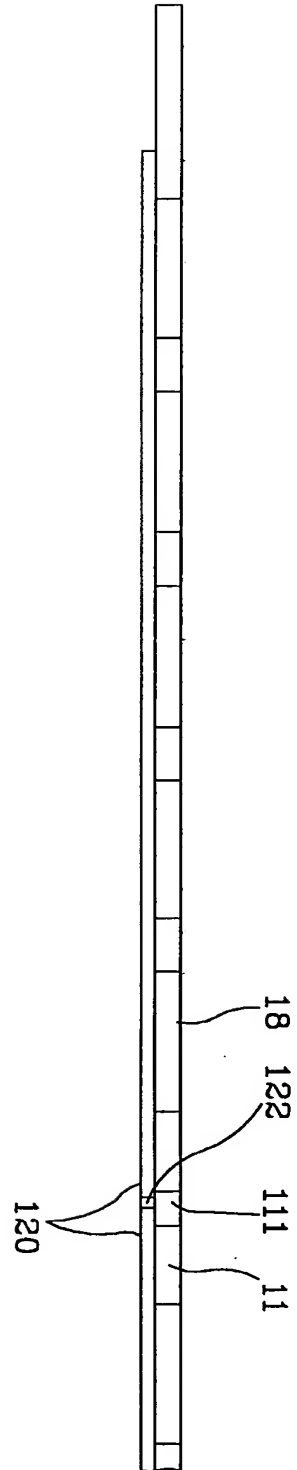


FIG. 15C

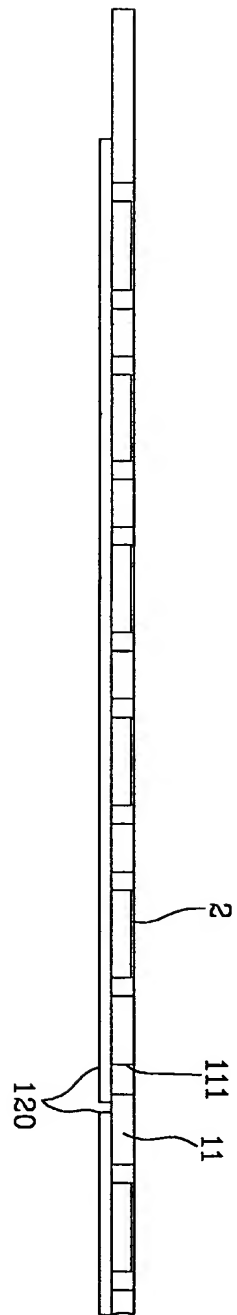


FIG. 15D

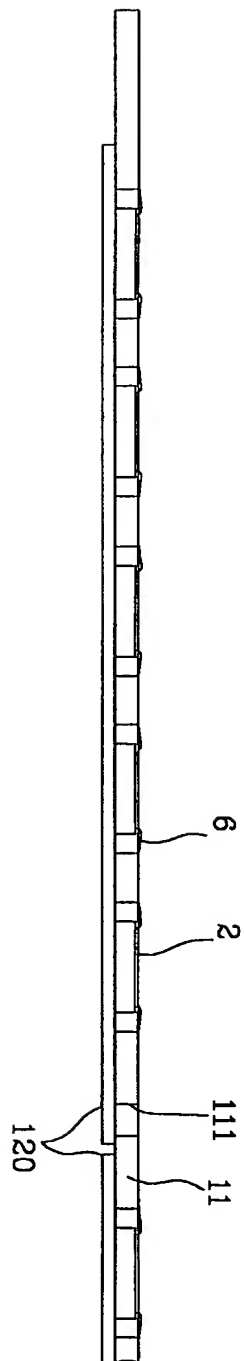


FIG. 15E

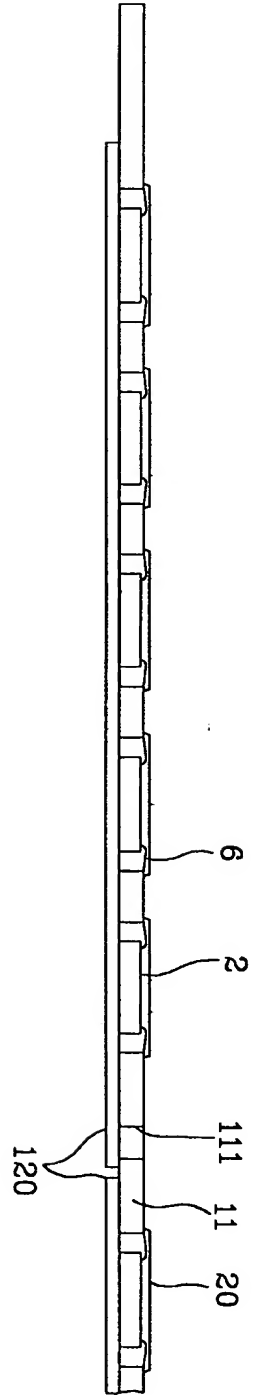


FIG. 15F

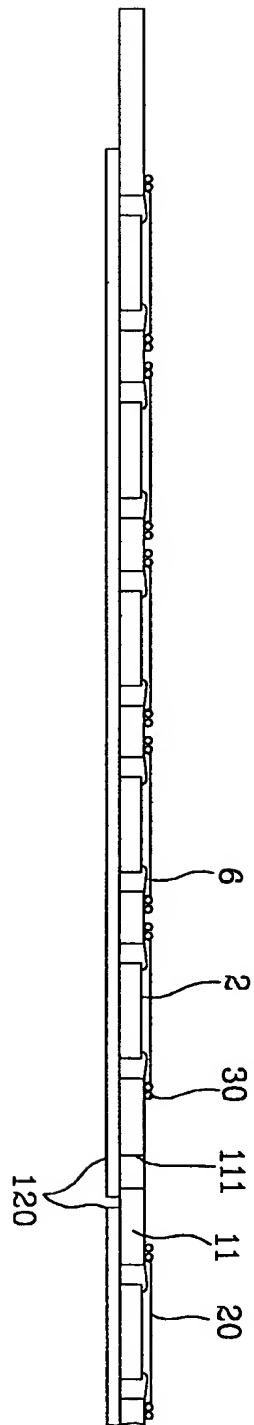


FIG. 15G

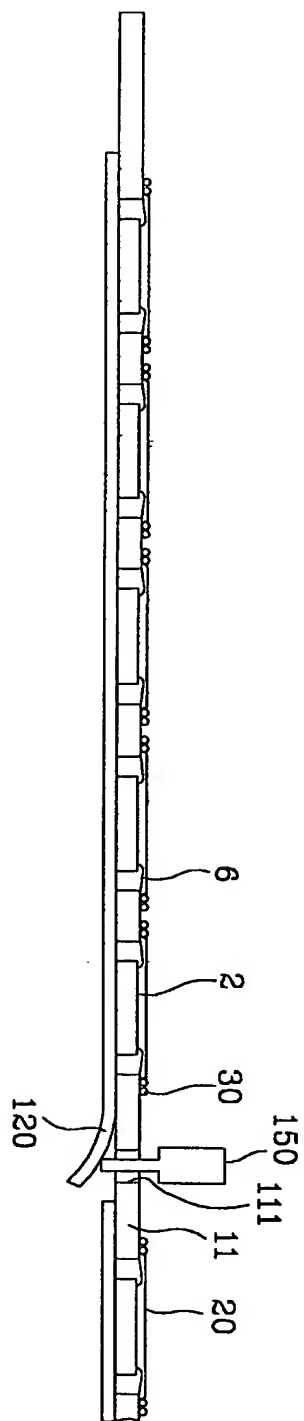


FIG. 15H

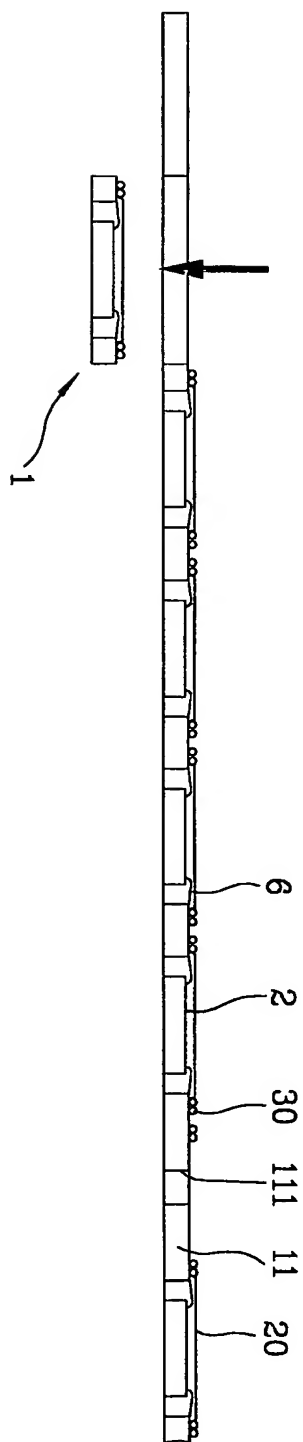
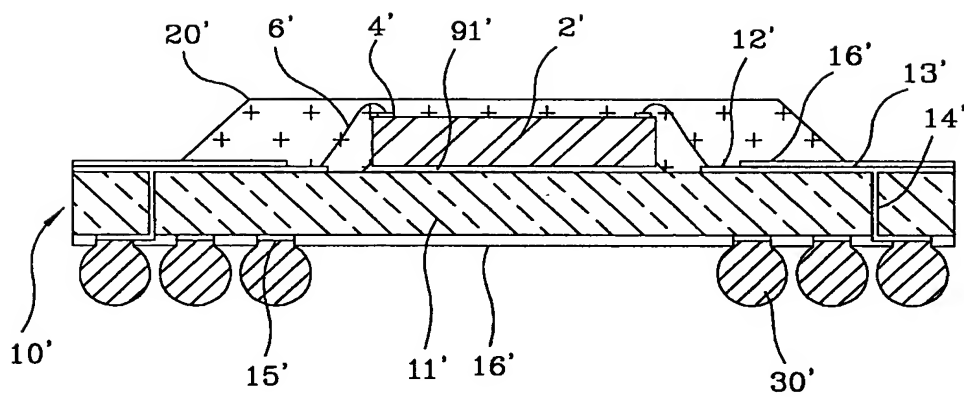
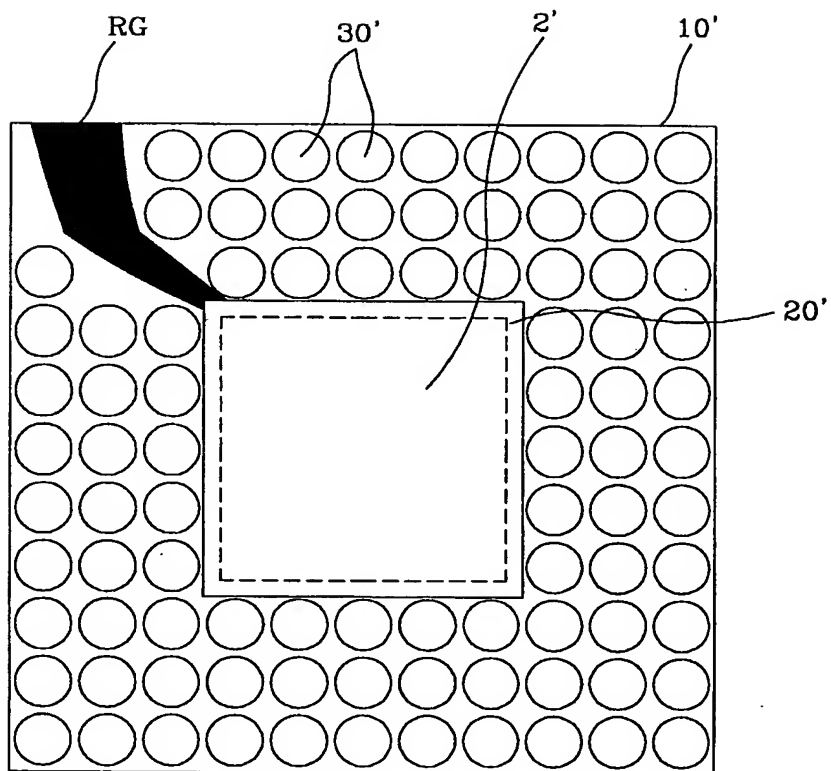


FIG. 16



-PRIOR ART-

FIG. 17



-PRIOR ART-

FIG. 18
 — PRIOR ART —

